REMARKS

The Office Action dated March 6, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 6, 8-11, 13, 18, 20, 22-23 have been amended to more particularly point out and distinctly claim the subject matter of the invention. Claims 2-4 and 19 have been cancelled without prejudice or disclaimer. No new matter has been added, and no new issues are raised which require further consideration or search. Therefore, claims 1, 5-18, and 20-23 are currently pending in the application and are respectfully submitted for consideration.

The Office Action rejected claims 1, 2, and 4-23 under 35 U.S.C. §102(b) as allegedly anticipated by Wynn (U.S. Patent No. 5,708,754) ("Wynn"). The Office Action alleged that Wynn discloses or suggests every claim feature recited in claims 1, 2, and 4-23. Applicants respectfully traverse these rejections for at least the following reasons.

Claim 1, upon which claims 5-12 are dependent recites a method, which includes receiving a speech signal including voice signals and background signals, and detecting voice activity and providing an indicator when no voice activity is detected. The method further includes encoding the speech signal to generate a plurality of parameters representing the signal, the plurality of parameters comprising a linear prediction calculation vector of quantized linear prediction filter coefficients, a gain parameter based on open-loop lag value, and a residual vector. The method further includes, when the

indicator is not present, outputting a first parametric representation of the speech signal comprising the plurality of parameters, and, when the indicator is present, modifying at least one of the plurality of parameters and outputting a second parametric representation of the speech signal including the modified parameter.

Claim 13, upon which claims 14-17 are dependent, recites an apparatus, which includes an input configured to receive a speech signal including voice signals and background signals, and a voice activity detector configured to detect voice activity and to provide an indicator when no voice activity is detected, and an encoder configured to encode the speech signal to generate a plurality of parameters representing the signal, the plurality of parameters comprising a linear prediction calculation vector of quantized linear prediction filter coefficients, a gain parameter based on open-loop lag value, and a residual vector. The apparatus further includes modifying circuitry configured to modify, when the indicator is present, at least one parameter of the plurality of parameter. The apparatus further includes an output configured to output a first parametric representation of the speech signal when the indicator is not present, the first parametric representation comprising the plurality of parameters, and configured to output a second parametric representation of the speech signal when the indicator is present, the second parametric representation comprising the modified parameter.

Claim 18 recites an apparatus, which includes receiving means for receiving a speech signal including voice signals and background signals, and detecting means for detecting voice activity and providing an indicator when no voice activity is detected.

The apparatus further includes encoding means for encoding the speech signal to generate a plurality of parameters representing the signal, the plurality of parameters comprising a linear prediction calculation vector of quantized linear prediction filter coefficients, a gain parameter based on open-loop lag value, and a residual vector, and outputting means for, when said indicator is not present, outputting a first parametric representation of the speech signal comprising said plurality of parameters, and, when the indicator is present, modifying at least one of the parameters and outputting a second parametric representation of the speech signal including the modified parameter.

Claim 20, upon which claim 21 is dependent, recites a network entity, which includes an input configured to receive a speech signal including voice signals and background signals, and a voice activity detector configured to detect voice activity and to provide an indicator when no voice activity is detected. The network entity further includes an encoder configured to encode the speech signal to generate a plurality of parameters representing the signal, the plurality of parameters comprising a linear prediction calculation vector of quantized linear prediction filter coefficients, a gain parameter based on open-loop lag value, and a residual vector, and modifying circuitry configured to modify, when the indicator is present, at least one parameter of the plurality of parameters, and an output configured to output a first parametric representation of the speech signal when the indicator is not present, the first parametric representation comprising the plurality of parameters, and configured to output a second parametric

representation of the speech signal when the indicator is present, the second parametric representation comprising the modified parameter.

Claim 22 recites a computer program comprising a code sequence which, when executed on a computer, encodes speech by implementing a method. The method includes receiving a speech signal including voice signals and background signals, and detecting voice activity and providing an indicator when no voice activity is detected. The method includes encoding the speech signal to generate a plurality of parameters representing the signal, the plurality of parameters comprising a linear prediction calculation vector of quantized linear prediction filter coefficients, a gain parameter based on open-loop lag value, and a residual vector. The method includes when the indicator is not present, outputting a first parametric representation of the speech signal comprising the plurality of parameters, and, when the indicator is present, modifying at least one of the plurality of parameters and outputting a second parametric representation of the speech signal including the modified parameter.

Claim 23 recites a system, which includes an input unit configured to receive a speech signal including voice signals and background signals, and a voice activity detector configured to detect voice activity and to provide an indicator when no voice activity is detected. The system further includes an encoder configured to encode the speech signal to generate a plurality of parameters representing the signal, the plurality of parameters comprising a linear prediction calculation vector of quantized linear prediction filter coefficients, a gain parameter based on open-loop lag value, and a

residual vector, and a modifying unit configured to modify, when the indicator is present at least one of the parameters. The method further includes an output unit configured to output, when the indicator is not present, a first parametric representation comprising said plurality of parameters, and to output a second parametric representation of the speech signal when the indicator is present, the second parametric representation comprising the modified parameter.

Thus, according to embodiments of the present invention, the modification of the parameters of a digital speech signal has an effect of smoothing background noise in the parameterized digital speech signal. Furthermore, according to embodiments of the present invention, the effect of smoothing background noise increases the overall speech quality of the digital speech signal.

As will be discussed below, Wynn fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the advantages and features discussed above.

Wynn generally discloses a signal processing method for a communication network, which filters out noise using iterative estimation of the LPC speech model with the addition of real-time operation continuous estimation of the noise power spectrum, modification of the signal refiltered each iteration, and time constraints on the number of poles and their movements across time frames. (see Wynn at Abstract).

Applicants respectfully submit that Wynn fails to disclose, teach, or suggest, all of the elements of the present claims. For example, Wynn fails to disclose, teach, or suggest, at least, "encoding the speech signal to generate a plurality of parameters

representing the signal, the plurality of parameters comprising a linear prediction calculation vector of quantized linear prediction filter coefficients, a gain parameter based on open-loop lag value, and a residual vector," and "when the indicator is not present, outputting a first parametric representation of the speech signal comprising the plurality of parameters, and, when the indicator is present, modifying at least one of the plurality of parameters and outputting a second parametric representation of the speech signal including the modified parameter," as recited in claim 1, and similarly recited in claims 13, 18, 22, and 23.

In the "Response to Arguments" section of the Office Action, the Office Action maintained that Wynn teaches all the claimed limitations. Specifically, the Office Action took the position that the claimed limitations "when the indicator is not present, outputting a first parametric representation of the speech signal comprising the plurality of parameters," and "when the indicator is present, modifying at least one of the plurality of parameters and outputting a second parametric representation of the speech signal including the modified parameter," read on Wynn, because Wynn discloses that if noise is detected, the input signal is fed to a noise suppression circuit which substantially attenuates the signal before passing the signal to outline 19. (see Office Action at page 7; see Wyn at col. 4, lines 7-46.) Applicants respectfully submit that "attenuating a signal" is not the same as "modifying at least on the plurality of parameters," because Wynn makes no mention of modifying a parameter, and there are many methods of attenuating a signal which fails to modify a set of parameters which represent a signal.

Furthermore, the cited passage of Wynn which the Office Action relies on as disclosing encoding the speech signal merely discloses converting an analog signal to a digital signal. (see Wynn at col. 4, lines 58-67). This is clearly not the encoding of the speech signal. Instead, this is the digitizing of the speech signal. Additionally, according to embodiments of the invention, the signal is already digitized before the signal is encoded. (see paragraph 0003, 0025). Finally, while Wynn discloses linear predictive coding, Wynn fails to disclose or suggest encoding a speech signal using a plurality of parameters, comprising a linear prediction calculation vector of quantized linear prediction filter coefficients, a gain parameter based on open-loop lag value, and a residual vector. In fact, as the Office Action correctly concluded, Wynn completely fails to disclose, or suggest, a gain parameter based on open-loop lag value. (see Office Action at page 5).

Therefore, for at least the reasons discussed above, Wynn fails to disclose, teach, or suggest, all of the elements of claims 1, 13, 18, and 22-23. For the reasons stated above, Applicants respectfully request that this rejection be withdrawn.

Claims 5-12 depend upon claim 1. Claims 14-17 depend upon claim 13. Claim 21 depends upon claim 20. Thus, Applicants respectfully submit that claims 5-12, 14-17, and 21 should be allowed for at least their dependence upon claims 1, 13, and 20, respectively, and for the specific elements recited therein.

The Office Action rejected claim 3 under 35 U.S.C. §103(a) as being allegedly unpatentable as obvious over Wynn as applied to claim 1, and further in view of Su, et al.

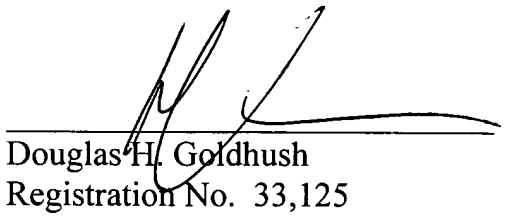
(U.S. Patent No. 6,823,303) ("Su"). Applicants respectfully submit that claim 3 has been cancelled, and said cancellation moots the rejection. Thus, Applicants respectfully request that the rejection be withdrawn.

For at least the reasons discussed above, Applicants respectfully submit that the cited prior art references fails to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1, 5-18, and 20-23 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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